

Agenda for Week of: **Feb 28, 2011**

Classroom Character Theme: _____

Guiding Questions:

- 1) How many people like me can Earth support?
- 2) Is that different from *How many people should Earth support?*



Date	Topic	Vocabulary	Homework
Mon, 2/28	Use unit conversions to estimate the carrying capacity	-Carrying capacity	Review sheet and typed practice FRQ (Due Friday)
Tues, 3/1	Use the World Population Datasheet to determine basic population facts.	-Population -Demography -Birth rate -Death rate -Immigration -Emigration	Review sheet and typed practice FRQ (Due Friday)
Wed, 3/2	Calculate & graph, the effects of exponential population growth	-Exponential growth -Doubling time	(1) Finish the activity for HW (2) Review sheet and typed practice FRQ (Due Friday)
Thurs, 3/3	Explain the impacts of exponential population growth; Review for Test		Finish the typed FRQ (12-point font and double-spaced)
Fri, 3/4	TEST	All the words above <i>plus</i> previous words about greenhouse effect, glaciers, and succession.	Test includes: <i>greenhouse effect (review pp. 56-57 and then 523-5 for assistance), glaciers vs. icebergs, Archimedes principle, succession, and population. See review sheet</i>

RISE TO THE CHALLENGE!Test Friday, March 4th.

Bring your binder to class every day

Check the website for work and notes: <https://msjohnsonGWHS.wikispaces.com>Check Engrade for your grade: www.engage.com/students**UNIT 4 REVIEW SHEET****Greenhouse effect vs. Ozone layer – an overview:**

1. The sun experiences nuclear fusion that gives off many forms of radiation, including shortwave (UV, strong), visible, and longwave (heat, infrared).
2. **Ozone layer:** As this radiation approaches Earth, most of the UV is absorbed by ozone (O₃) in the upper stratosphere (~50 km high) and causes the ozone molecules to vibrate and rotate (giving kinetic energy to the upper stratosphere and heating it up).
3. The remaining UV and longwave radiation hit Earth's surface and heat it up.
4. Like any hot object, Earth's surface gives off longwave (infrared, IR) radiation.

5. **Natural greenhouse effect:** Some molecules (such as _____, _____, _____ and _____) in our atmosphere are called “greenhouse gases” because they absorb infrared (heat) radiation and heat the troposphere similar to how incoming light heats a greenhouse (or your car parked in the sun). This natural greenhouse effect is a *good thing*: it is an important factor in making our planet warm enough to live in (unlike Mars). **Note:** many people simplify this by saying greenhouse gases “reflect” the longwave radiation, but they actually absorb it – causing those molecules to vibrate and rotate – and thus re-radiate it out as kinetic energy and heat.
6. **Man-made greenhouse effect:** Before the industrial revolution the concentration of CO₂ in the troposphere was about _____ parts per million (ppm). However, burning of fossil fuels by human activities has caused the concentration to increase to _____ ppm. This means that more outgoing, _____ wave radiation will be trapped in our atmosphere.
7. **Ozone hole:** Chlorofluorocarbons (CFCs), invented by people in the 1930s, are inert (non-reactive) in the troposphere and therefore floated up into the stratosphere. Unfortunately, one CFC can break apart thousands of ozone molecules (O₃ → O + O₂) during special conditions (in the springtime) and locations (in the stratosphere above the North and South poles). The destruction of ozone “thins” the ozone layer to the point where we call it a “hole”. This is all invisible to the naked eye.

Glaciers vs. icebergs

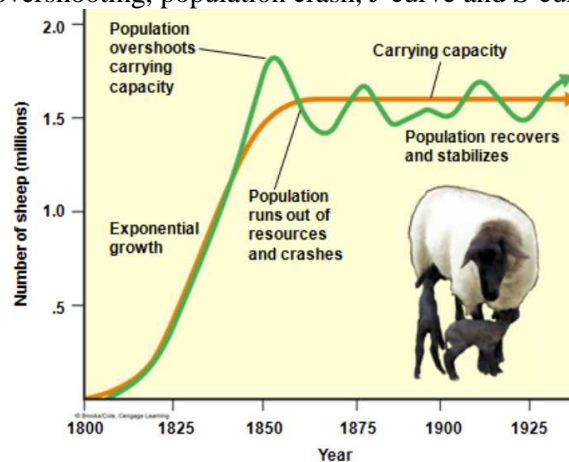
1. Use Archimedes principle to explain why melting glaciers DO cause an increase in sea level while melting icebergs DO NOT.
2. Explain why glaciers cannot flow uphill. Instead, explain how the balance between accumulation and ablation (melting and sublimation) determines whether a glacier “advances” or “retreats”

Primary vs. secondary succession

1. Explain how primary and secondary succession differ and give examples of the starting point for each.
2. Explain how soil development is related to changes in populations of plant species in an area.

Carrying Capacity & Population

1. Explain that there is a limit to growth of any population based upon the amount of resources available.
2. Use unit conversions to apply an individual’s consumption to a bigger population.
3. Identify carrying capacity, overshooting, population crash, J-curve and S-curves on a graph like this:



4. Calculate population growth given a population rate
5. Explain what we mean by “exponential population growth”
6. Explain what factors have changed the birthrate and death rate of the human population to allow for the quickening doubling-time of the human population.
7. What are some negative impacts of human population growth?